For centuries, orthopaedic surgeons have been managing the pain, limp, and gait disturbance that develop in association with various traumas and diseases of the hip joint. The hip is a ball-and-socket joint that has a great range of movement, but it is stable and rarely dislocates, even after high-impact trauma, and can withstand repeated motion and a fair amount of wear and tear. However, despite its durability, it is not indestructible. With age and use, the cartilage can wear down or become damaged. Overuse of muscles and tendons of the hip, for example, in athletes, leads to hip pain due to muscle strain or tendinitis. Other factors that can cause pain and lead to progressive articular changes include the abnormal anatomy a person is born with, conditions that develop during the growth and development of bones, and trauma as well as wear and tear due to ageing. The diagnosis and management of hip injuries have evolved substantially with advances in hip arthroscopy and diagnostic tools such as MRI and new, minimally invasive techniques.

This book provides a detailed account of the hip joint's anatomy and biomechanics and serves as a practical guide for the diagnosis and treatment of hip diseases and injuries at all ages. The book covers recent trends in orthopaedic surgery of the hip joint, including the latest advances in revision total hip arthroplasty (THA), computer-assisted navigation for THA, resurfacing of the hip joint, neoplastic conditions around the hip, and indications, complications, and outcomes of hip arthroscopy. The chapters are written by experts who have contributed greatly to the understanding of problems of the hip joint. The book will be appreciated by undergraduate and postgraduate students, experienced hip surgeons, medical doctors, and practicing consultants in orthopaedics.

Dr K. Mohan Iyer did his MCPS (1971) from the College of Physicians and Surgeons, Mumbai, India; MBBS (1971) from the University of Mumbai; D'Orth. and FCPS Orth. (1975) from the College of Physicians and Surgeons; MS Orth. (1978) from the University of Mumbai; and M. Ch. Orth. (1981) from the University of Liverpool, UK. During this time, he wrote three theses on fractures of the patella, excision arthroplasty of the elbow, and excision of the trapezium for carpometacarpal arthritis of the thumb.

From 1971 to 1972, Dr Iyer was with K.E.M. Hospital, Mumbai, India, on a resident-rotating internship. His other nonorthopaedic appointments were as resident house surgeon in general surgery (1973–1974), K.E.M. Hospital, and as SHO (1976), East Birmingham Hospital, UK. His orthopaedic appointments were as resident house surgeon in orthopaedics (1973) and resident registrar orthopaedics (teaching post, 1974–1976), K.E.M. Hospital, and as registrar in orthopaedics (1976–1977), Dryburn Hospital, Durham, UK, in addition to numerous other locum consultant and specialist registrar jobs.

Dr Iyer has presented numerous papers at state, national, and international conferences in Singapore and Bangkok. He was in charge of the teaching program in orthopaedics for undergraduate students and an examiner for the MBBS degree at the University of Bangalore, India. He has also carried out a wide range of operative work on all kinds of major fractures, as well as arthroscopy of the knee, spinal surgery, and elbow and total hip replacements, and has published numerous articles and book chapters. He has done original research work, as can be seen on his website kmohaniyer.com, and has been instrumental in devising a modified posterior approach to the hip joint, which he has been following from 1981 till today.

In 2008, Dr Iyer moved back to his home town, Bengaluru, India.

The Hip Joint

edited by
K. Mohan Iyer
The Hip Joint
To the memory of my respected teacher  
(Late) Mr. Geoffrey V. Osborne  

and  

My wife, Mrs. Nalini K. Mohan  
My daughter, Deepa Iyer, MBBS, MRCP (UK)  
My son, Rohit Iyer, BE (IT)  
My grandson, Vihaan
Contents

Foreword xxiii
Preface xxvii
Acknowledgements xxix

1 Embryology and Anatomy of the Hip Joint 1
K. Mohan Iyer
1.1 Embryology of the Hip Joint 1
   1.1.1 The Fibrous Capsule 3
   1.1.2 The Acetabular Labrum 3
   1.1.3 Ligament of the Head of the Femur 3
   1.1.4 The Iliofemoral Ligament 3
1.2 Anatomical Relations of the Hip Joint 4
1.3 Movements of the Hip 4
1.4 Applied Anatomy 5
1.5 Blood Supply of the Hip Joint 6
   1.5.1 Anatomy of the Blood Supply 6
   1.5.2 Changes with Age 7

2 Biomechanics of the Hip Joint 9
Ram Ravishankar
2.1 Functional Anatomy 10
   2.1.1 Bony Structure 11
   2.1.2 Articular Cartilage 12
   2.1.3 Acetabular Labrum 13
   2.1.4 Capsule, Ligaments, and Musculature 13
2.2 Kinematics and Kinetics 15
   2.2.1 Forces Acting on the Hip Joint 16
   2.2.2 Biomechanics Applied to Total Hip Arthroplasty 23


3 Clinical Examination of the Hip Joint

K. Mohan Iyer

3.1 Inspection 33
3.2 Palpation 34
3.3 Range of Motion 35
    3.3.1 Active Range of Movements 36
    3.3.2 Passive Range of Movements 36
3.4 Neurological Examination 37
    3.4.1 Muscles 37
    3.4.2 Sensory Testing 38
3.5 Special Tests 39
    3.5.1 Trendelenburg’s Test 39
    3.5.2 Limb Length Discrepancy 39
        3.5.2.1 True limb length discrepancy 40
        3.5.2.2 Apparent limb length discrepancy 40
    3.5.3 Ober’s Test 40
    3.5.4 Important Tests for Congenital Dislocation of the Hip 40
        3.5.4.1 Ortolani click 40
        3.5.4.2 Telescoping 41
        3.5.4.3 Adduction contracture 41
    3.5.5 Proximal Focal Femoral Deficiency 41
        3.5.5.1 Treatment 41

4 Imaging of the Hip Joint

Rajesh Botchu and Ram Vaidhyanath

4.1 Introduction 43
    4.1.1 Anteroposterior Pelvic Radiograph 45
    4.1.2 Lateral View 46
    4.1.3 Frog Leg Lateral View 47
    4.1.4 Judet View 47
4.1.5 Acetabulum 47
4.2 MRI Anatomy of the Hip 49
  4.2.1 Muscles and Tendons 51
4.3 Labrum 57

5 Disorders of the Hip in Children and Adolescents 59
  K. Vinodh, Sughran Banerjee, K. Mohan Iyer,
  Vijaya Kumar Kempanna, Robert Jennings, and Sharad Goyal

5.1 Septic Arthritis of the Hip in Infants and Children 59
  5.1.1 Epidemiology 60
  5.1.2 Aetiopathology 61
  5.1.3 Causative Organisms 62
  5.1.4 Clinical Features 63
  5.1.5 Investigations 64
  5.1.6 Imaging Studies 64
  5.1.7 Joint Aspiration 68
  5.1.8 Differential Diagnosis 69
  5.1.9 Treatment 70
    5.1.9.1 Antibiotics 71
  5.1.10 Prognosis 72

5.2 Complications and Treatment of Complications in Children 72
  5.2.1 Chondrolysis 74
  5.2.2 Dislocation with Capital Femoral Epiphysis Intact
    5.2.2.1 Sequelae related to AVN of the CFE and growth plate damage 76
  5.2.2.2 Treatment options for Hunka types 78
  5.2.3 Ilizarov’s Reconstruction 83

5.3 DDH or Congenital Dislocation of the Hip Joint 86
  5.3.1 Incidence 86
  5.3.2 Pathology 87
  5.3.3 Diagnosis 87
  5.3.4 Graf Angles 88
    5.3.4.1 Measurements 88
  5.3.5 Management 89
    5.3.5.1 Birth to 6 months 89
    5.3.5.2 6–18 months 90
5.7.11.1 Osteotomies 113
5.7.12 Complications 114
  5.7.12.1 Valgus slip 115

5.8 Legg–Calvè–Perthes Disease 115
  5.8.1 Epidemiology 116
  5.8.2 Risk Factors 117
  5.8.3 Aetiology 117
  5.8.4 Pathogenesis 119
  5.8.5 Classification 119
    5.8.5.1 Catterall classification 119
    5.8.5.2 Salter–Thompson classification 120
    5.8.5.3 Herring lateral pillar classification 120
    5.8.5.4 Waldenstrom's radiographic stages 121
    5.8.5.5 Stulberg classification 121
  5.8.6 Clinical Features with Physical Examination 122
  5.8.7 Differential Diagnosis 122
  5.8.8 Investigations 123
  5.8.9 Treatment 124
    5.8.9.1 Nonoperative management 124
    5.8.9.2 Indications for nonoperative management 124
    5.8.9.3 Operative management 124
    5.8.9.4 Types of residual deformity 127
  5.8.10 Late Complications of the Disease 128
  5.8.11 Natural Course of the Disease 128
  5.8.12 Prognosis 128

6 Injuries around the Hip Joint, Including Periprosthetic Fractures 139
  K. Mohan Iyer, Vijaya Kumar Kempanna, Sharad Goyal, Shibu Krishnan, and Gurdeep Singh Birin
  6.1 Fractures of the Neck of the Femur in Children 139
    6.1.1 Classification of Femoral Neck Fractures 140
    6.1.2 Treatment 142
  6.2 Fractures of the Neck of the Femur in Adults 145
    6.2.1 Introduction 145
    6.2.2 Risk Factors 145
6.2.3 Bony Trabeculae of the Proximal Femur (Singh Index) 146
6.2.4 Mechanism of Injury 147
6.2.5 Epidemiology 148
6.2.6 Fracture Classification 148
6.2.6.1 Intracapsular fractures 148
6.2.6.2 Extracapsular fractures 150
6.2.7 Clinical Presentation 155
6.2.8 Diagnosis 155
6.2.9 Management of Femoral Neck Fractures 156
6.2.9.1 Assessment and Management in the Emergency Department 156
6.2.10 Definitive Treatment of Intracapsular Femoral Neck Fracture 156
6.2.10.1 Nondisplaced intracapsular femoral neck fracture 156
6.2.10.2 Displaced intracapsular femoral neck fracture in the elderly 158
6.2.10.3 Displaced intracapsular femoral neck fracture in young adults 161
6.2.11 Treatment of Intertrochanteric Hip Fractures 162
6.2.11.1 Extramedullary devices 163
6.2.11.2 Intramedullary device 164
6.2.11.3 Arthroplasty 165
6.2.12 Treatment of Subtrochanteric Hip Fractures 166
6.2.12.1 Cephalomedullary nail 166
6.2.12.2 Fixed-angle blade plate 167
6.2.12.3 Atypical subtrochanteric fractures 167
6.2.13 Complications of Femoral Neck fractures 167
6.2.14 Stress Fractures of the Femoral Neck 168
6.2.14.1 Diagnosis 168
6.2.14.2 Treatment 168
6.2.15 Secondary Prevention of Fragility Fractures 169
6.3 Dislocations and Fractures of the Hip Joint 169
6.4 Periprosthetic Fractures of the Hip Joint 171
6.4.1 Introduction 171
6.4.2 Epidemiology 172
6.4.2.1 Risk factors 172
6.4.3 Classification of Periprosthetic Fractures
6.4.3.1 Fractures based on anatomical site
6.4.3.2 Fractures based on timing
6.4.4 Investigations
6.4.5 Treatment
6.4.5.1 Nonoperative treatment
6.4.5.2 Surgical management of periprosthetic acetabular fractures
6.4.5.3 Surgical considerations in the management of periprosthetic femoral fractures

7 The Adult Hip and Its Disorders
K. Mohan Iyer
7.1 Osteoarthritis of the Hip Joint
7.1.1 Pathology
7.1.2 Symptoms
7.1.3 Treatment
7.1.3.1 Local treatment
7.1.3.2 Operative treatment
7.1.3.3 Surgical procedures
7.1.3.4 Prostheses
7.2 Rheumatoid Arthritis of the Hip Joint
7.2.1 Juvenile Rheumatoid Arthritis
7.3 Tuberculosis of the Hip Joint
7.3.1 Pathology
7.3.2 Symptoms
7.3.3 Signs
7.3.4 Radiological Examination
7.3.5 Diagnosis
7.3.5.1 Differential diagnoses
7.3.6 Prognosis
7.3.7 Treatment
7.3.7.1 General treatment
7.3.7.2 Local treatment
7.3.7.3 Stage of convalescence
7.3.7.4 Operative treatment
7.3.7.5 Arthrodesis
8.1.7.1 Initial management 234
8.1.7.2 Medical management 235
8.1.7.3 Surgical management 235
8.1.8 Components of Hip Replacement 235
8.1.9 Types of Hip Replacements 236
  8.1.9.1 Cemented joint replacement 236
  8.1.9.2 Cementless or uncemented joint replacement 237
  8.1.9.3 Hybrid replacement 237
8.1.10 Types of Materials Used in Joint Replacement Surgery 237
8.1.11 Surgical Approaches 241
  8.1.11.1 Transgluteal (Hardinge) approach 241
  8.1.11.2 Posterior approach 242
  8.1.11.3 Charnley approach 242
  8.1.11.4 Minimally invasive technique 243
  8.1.11.5 Anterior supine intermuscular approach 243
8.1.12 Complications 244
8.2 Revision Hip Arthroplasty 247
  8.2.1 Introduction and the Burden of Revision Hip Surgery 247
  8.2.2 Indications for Revision Surgery 249
  8.2.3 Mechanisms of Failure 249
    8.2.3.1 Aseptic loosening 249
    8.2.3.2 Septic loosening 254
    8.2.3.3 Stem fracture 256
    8.2.3.4 Ceramic-bearing fractures 257
    8.2.3.5 Dislocation 258
    8.2.3.6 Periprosthetic fractures and revision surgery 259
    8.2.3.7 Failure of resurfacing hip arthroplasty 261
  8.2.4 Evaluation of the Failed Hip Replacement 262
  8.2.5 Classifications of Bone Loss 263
  8.2.6 Surgical Approaches 265
  8.2.7 Removal of Implants 267
    8.2.7.1 Removal of uncemented acetabular cups 268
8.2.7.2 Removal of cemented acetabular cups 268
8.2.7.3 Removal of cemented femoral stems and cement 269
8.2.7.4 Removal of uncemented femoral stems 270
8.2.8 Acetabular Reconstruction: Management of Bone Loss 270
  8.2.8.1 Impaction bone grafting 270
  8.2.8.2 Impaction bone grafting of the acetabulum 270
  8.2.8.3 Revision of uncemented acetabular components 271
8.2.9 Femoral Reconstruction 273
  8.2.9.1 Cemented femoral revision 273
  8.2.9.2 Uncemented femoral revision 274
8.2.10 Single-Stage or Two-Stage Revision for Infection 275
8.2.11 Complications and Outcomes of Revision Surgery 278
8.2.12 Revision Hip Arthroplasty: Case Example 280
  8.2.12.1 Revision procedure 281

9 Girdlestone Arthroplasty 311
  K. Mohan Iyer
  9.1 Technique 312
    9.1.1 Position of the Patient 312
    9.1.2 Exposure 312
  9.2 Postoperative Management 313

10 Osteotomies around the Hip Joint 315
  K. Mohan Iyer
  10.1 Biomechanics of the Hip Joint 315
  10.2 Classification of Osteotomies around the Hip Joint 316
    10.2.1 Classification Based on Indications 316
    10.2.2 Classification Based on Location 316
    10.2.3 Classification Based on Relief of Pain 317
    10.2.4 Classification Based on Neurologic Conditions 317
  10.3 Salter’s Osteotomy 317
10.4 Pemberton’s Osteotomy 318  
10.5 Triple Innominate Osteotomy (Steel) 319  
10.6 Ganz Osteotomy: Periacetabular Osteotomy 319  
10.7 Shelf Procedure (Staheli) 320  
10.8 Chiari Osteotomy 320  
10.9 Schanz Osteotomy (Low S/T Osteotomy) 321  
10.10 Lorenz Bifurcation Osteotomy 321  
10.11 Osteotomy for Coxa Vara 322  
10.11.1 Osteotomies for Pain Relief in Osteoarthritis 322  
10.12 Femoral Varus Osteotomy 323  
10.13 Femoral Valgus Osteotomy 323  
10.14 Blount Osteotomy 324  
10.14.1 Blount Abduction Osteotomy 325  
10.14.2 Blount Adduction Osteotomy 325  
10.15 Osteotomy to Correct Unstable Intertrochanteric Fractures 325  
10.16 Corrective Osteotomies 326  
10.16.1 Oblique Osteotomy 326  
10.17 McMurray’s Osteotomy 327  
10.18 Dickson’s High Geometric Osteotomy 327  
10.19 Girdlestone Osteotomy 327  
10.20 Transtrochanteric Anterior Rotational Osteotomy of Sugioka 328  
10.21 Osteotomy in Perthes Disease 328  

11 Hip Resurfacing 331  
*Michael C. Moss, Sharad Goyal, and Gyanendra Kumar Singh*  
11.1 Introduction 331  
11.2 Indications 333  
11.3 Contraindications 333  
11.3.1 Absolute 333  
11.3.2 Relative 333  
11.4 The Patient’s Perspectives 334  
11.5 Theoretical Advantages of Hip Resurfacing 334  
11.6 Current Concerns 335  
11.7 Answers to the Patient’s Perspectives 338
11.8 Operative Technique of MoM Implants and Considerations 339
11.9 Assessing a Patient of MoM Hip Resurfacing in the Clinic
11.9.1 Investigations 340
11.10 Conclusion 342

12 Minimally Invasive Total Hip Replacement 345
Dayanand Manjunath and Deepak Shivanna
12.1 Introduction 345
12.2 Potential Advantages for the Patient 349
12.3 Potential Advantages to Health Care Providers 350
12.4 Patient Selection and Indications 350
12.5 Instruments for Minimally Invasive Surgery
12.5.1 Direct Anterior Approach 351
12.5.2 Anterolateral Approach 354
12.5.3 Posterior Approach 354

13 Computer Navigation in Hip Arthroplasty 361
Wasim Khan
13.1 Introduction 362
13.2 Limitations of Conventional Alignment Jigs 363
13.3 Types of Computer Navigation Systems 364
13.4 Computer Navigation in Total Hip Arthroplasty 365
13.5 Computer Navigation in Total Hip Resurfacing 367
13.6 Limitations of Computer Navigation Systems 368
13.7 Conclusion 369

14 Neoplastic Conditions around the Hip 373
Ram Vaidhyanath and Rajesh Botchu
14.1 Introduction 373
14.2 Osteogenic Tumours
14.2.1 Bone Islands 374
14.2.2 Osteoid Osteoma and Osteoblastoma 375
14.2.3 Conventional Osteosarcoma 377
14.2.4 Surface Osteosarcoma 377
14.2.5 Periosteal Osteosarcoma 378
14.2.6 Telangiectatic Osteosarcoma 379
Contents

15.3 Clinical Examination 417
15.4 Imaging of the Hip 422
15.5 Indications/Contraindications for Hip Arthroscopy by Layer 426
  15.5.1 Overview 426
  15.5.2 Layer 1 426
    15.5.2.1 Arthroscopic FAI indications 427
    15.5.2.2 Arthroscopic relative and absolute contraindications 429
  15.5.3 Layer 2 429
    15.5.3.1 Labral tears 429
    15.5.3.2 Capsular injuries 432
    15.5.3.3 Ligamentum teres tears 433
  15.5.4 Layer 3 434
    15.5.4.1 Anterior enthesopathy 434
    15.5.4.2 Posterior enthesopathy 435
    15.5.4.3 Lateral enthesopathy 436
    15.5.4.4 Medial enthesopathy 436
  15.5.5 Layer 4 437
    15.5.5.1 Piriformis syndrome 437
    15.5.5.2 Sciatic nerve entrapment 438

15.6 Hip Arthroscopy: The Technical Aspects of the Procedure 439
  15.6.1 Patient Positioning 440
    15.6.1.1 Supine 440
    15.6.1.2 Lateral 441
  15.6.2 Equipment 441
  15.6.3 Portals 443
    15.6.3.1 Central compartment 443
    15.6.3.2 Peripheral compartment 444
    15.6.3.3 Peritrochanteric compartment 445
  15.6.4 Operative Technique 445
    15.6.4.1 Anaesthesia 445
    15.6.4.2 Equipment 445
    15.6.4.3 Prepping and draping 447
    15.6.4.4 Portal placement 448
  15.6.5 Systematic Arthroscopic Assessment of the Central and Peripheral Compartments 448
15.6.5.1 Central compartment 448
15.6.5.2 Peripheral compartment 449

15.7 Common Interventions 449

15.7.1 Surgical Technique for Labral Tears and FAI Surgery 449
15.7.1.1 Microfracture 451
15.7.1.2 Loose bodies 453

15.7.2 Surgical Technique for Peritrochanteric Space Pathology 453
15.7.2.1 Gluteus medius repair 453
15.7.2.2 ITB release 453
15.7.2.3 Postoperative regime 453

15.8 Specific Protocols 454
15.9 Complications 456
15.9.1 Categories 457
15.10 Revision Surgery 459
15.11 Outcomes Following Primary Surgery 460
15.12 Summary 460

Index 463
Foreword
by Prof. George Bentley, Dr S. Terry Canale, and Prof. (Dr) M. Shantharam Shetty

Prof. George Bentley, MBChM, DSc, FRCS (Eng.), FRCSEd, FMedSci
Professor Emeritus and Director, Institute of Orthopaedics and Musculo-Skeletal Science, University College, London
Honorary Consultant Orthopaedic Surgeon, Royal National Orthopaedic Hospital, Stanmore, UK

This thoughtful text on the hip joint is the result of the author’s experience of over 35 years since his association with the University of Liverpool and the Royal Infirmary and Children’s Hospital in Liverpool as registrar and MCh Orth. graduate. Dr K. Mohan Iyer was an outstanding student who, under the tutelage of late Mr Geoffrey V. Osborne and our consultant colleagues in the Liverpool region, achieved distinction clinically and academically. This book, entitled *The Hip Joint*, is a distillation of his knowledge and experience since that time, together with that of his colleagues from India and the UK. As a consequence it contains valuable information and
practices from India as well as the UK, which are only available to those who have practised in the challenging environment of Indian orthopaedics and traumatology.

The text takes the reader from childhood disorders, which are seen less commonly in the West nowadays, right through adolescence and early adulthood and the problems, ever increasing, of the hip in the older population. The text reflects the views of the author, but valuable additional chapters have been contributed by colleagues with special interests.

This book has the great advantage of a consistent theme and a philosophical approach to practical management of hip diseases and injuries. It will be appreciated by students, post-graduates, and experienced orthopaedic surgeons alike.

S. Terry Canale, MD
Professor and Chair, University of Tennessee-Campbell Clinic Department of Orthopaedic Surgery and Biomedical Engineering, Memphis, Tennessee, USA
Editor, Campbell’s Operative Orthopaedics, 9, 10, 11, and 12 editions

I am honoured to have been asked by Dr K. Mohan Iyer to provide a foreword to this text. I first became acquainted with Dr Iyer’s work on the hip joint when I was editing the 9th edition of Campbell’s
Operative Orthopaedics (1992). His descriptions of his innovative posterior approach to the hip and trochanteric osteotomy are classics in the orthopaedic literature. In addition to his extensive research and publication on approaches to the hip and total hip arthroplasty, Dr Iyer has produced an impressive list of publications on injuries and disorders of the hand, wrist, and shoulder.

This current text on the hip joint is a culmination of over 30 years of research by Dr Iyer, and I am sure it will become a valuable asset to orthopaedic surgeons worldwide. He has assembled a stellar group of contributing authors and has, of course, added his own vast experience to the authoring and editing process. We are proud to have Dr Iyer included as one of the esteemed surgeons whose work has added so much to Campbell’s Operative Orthopaedics over the years, and we look forward to adding this textbook to our collection of essential educational tools for our residents and fellows.

Prof. (Dr) M. Shantharam Shetty
Pro-Chancellor, Nitte University
Chairman, Tejasvini Hospital SSIOT, and World Bunts’ Foundation
Adjunct Professor, The TN Dr. MGR Medical University

I consider it my privilege to pen this foreword to the monumental work The Hip Joint by my illustrious colleague Dr K. Mohan Iyer.
I have had the pleasure of knowing and interacting with him for over the last 40 years. Dr Iyer is an outstanding surgeon and clinician with an innovative bent of mind. He has authored seven books, and this book, *The Hip Joint* is a “jewel in his crown”. This book has undergone remarkable tailoring, taking into consideration the evolution of changes that have taken place in understanding hip problems. Dr Iyer has also taken great pains to evaluate the problems, the needs of Asian patients in particular, and how to approach difficult situations, considering the functional elements of the patient. Dr Iyer has put together the rich experience of contributors to this book to make it a reference guide for residents and surgeons in their everyday practise throughout the world. His dream and hard work have fully borne fruit in this classic presentation. I pray to God to give him the continued strength and vision to continue his good work.
Preface

I have mainly written this preface in memory of late Mr Geoffrey V. Osborne, who was like a father figure to me. After his retirement from the University of Liverpool, he was busy writing a thesis for his PhD in printing from the University of Liverpool, UK, which he managed to get in the end. During his later years just before his retirement, he was extremely keen to propagate his approach and nicknamed it the "Liverpool Approach", along with Professor Robert Owen.

The first foreword to this, The Hip Joint, listing the recent trends in orthopaedics prevailing all around the world, has been kindly given by my esteemed professor George Bentley ChM, FRCS. Prof. Bentley knew me and late Mr Osborne very well, and hence this is a fitting tribute to him.

The second foreword has been given by Dr S Terry Canale, MD, editor of Campbell’s Operative Orthopaedics, a book that is called the Bible of orthopaedics. My original research on the hip joint first came out in its 9th edition in 1992.

The third foreword has been given by Prof. Dr M. Shantharam Shetty, a senior orthopaedic surgeon.

Late Mr Osborne inspired me with his approach and knowledge of orthopaedics, which is unforgettable, and I would not have followed in his footsteps had it not been for him. He was a patron of the Indian Orthopaedic Association, and he patiently listened when I presented my original research on the hip joint done in Liverpool, with my teacher, late Dr Rasik M. Bhansali, who was the chairman at the Conference of the Association of Surgeons of India in December 1982. Despite my original research work on the hip joint, he inspired me to do a follow-up of his cases of excision of the
trapezium and arthrography of the pseudojoint to be presented as a thesis to the University of Liverpool, UK, for the MCh Orth. degree, along with Prof. Graham Whitehouse, the newly appointed professor of radiodiagnosis at the University of Liverpool, UK.
Acknowledgements

I am extremely grateful to Prof. George Bentley for his appreciation of my book *The Hip Joint* being dedicated to my respectful teacher late Mr Geoffroy V. Osborne, Senior Consultant Orthopaedic Surgeon, University of Liverpool, UK, and for giving me the first foreword to this book, despite leading a busy, tumultuous life in orthopaedics till today. I am also grateful to Dr S Terry Canale of *Campbell's Operative Orthopaedics* for having given me the second foreword to this book and to Prof. Dr Shantharam Shetty, a senior orthopaedic surgeon in Karnataka, India, for his encouraging third foreword to this book.

My sincere thanks go to Prim. Univ.-Prof. Dr Gerald Pflüger, Professor of Orthopaedic Surgery, University of Vienna, Emeritus Medical Director and Chief of Orthopaedic Department, EKH, Vienna, and Head of the Medical Education Academy, for being kind enough to go through the chapter “Minimally Invasive Surgery of the Hip Joint” for the benefit of the target audience and to deem it ideal for publication in my book. I would also like to express my thanks to Prof. Fares S. Haddad, UCLA, London, UK, for his encouraging guidance and Mr Dinesh Nathwani, Consultant and Hon. Senior Lecturer, Trauma and Orthopaedic Surgery, Imperial College Healthcare, for all his timely help, without which it would have been extremely difficult to complete this book.

Finally I would like to thank all the orthopaedic surgeons for their valuable contributions in their sub-specialities. I am extremely grateful to Magdi E. Greiss, MD, MCh Orth., FRCS, Senior Consultant Orthopaedic Surgeon, North Cumbria University Hospitals, UK, and Former President, BOFAS, UK, for his invaluable snaps, which he had preserved in his life during his training and early years after becoming a consultant in orthopaedics. I also thank Drs K. Vinodh,
Ram Vaidyanath, Rajesh Botchu, and Steve James for help with images and X-rays required for complete coverage of the topic of this book.

I am extremely grateful to Drs Ardeshir Bonshahi, David Ball, Wasim S. Khan, Shibu P. Krishnan, K. Vinodh, Ram Vaidhyanath, Rajesh Botchu, Vijaya Kumar H. K., Sharad Goyal, Sughran Banerjee, Robert Jennings, Edward A. O. Lindisfarne, Gyanendra Kumar Singh, Michael Moss, Gurdeep Singh Biring, Ram Ravishankar, Dayanand Manjunath, and Deepak Shivanna for contributing their valuable and unique chapters to this book.

I am also indebted to the AAOS for permissions given to use a few illustrations.

I am very thankful to Stanford Chong and Jenny Rompas, Directors and Publishers, and Sarabjeet Garcha, Sr Editorial Manager, Pan Stanford Publishing Pte. Ltd., Singapore, for guiding me throughout the publishing process and to Archana Ziradkar, Sr Editor, for her invaluable help while preparing the manuscript.

Above all I highly appreciate the help of my son, Mr Rohit Iyer, in the presentation and publication of this book.

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